

BCA
SEMESTER -3RD
COMPUTER ORGANIZATION & ARCHITECTURE
BCA-304

Duration: 3 Hrs.

Marks: 70

{ Part : A (Objective) = 20 }
{ Part : B (Descriptive) = 50 }

[PART-B : Descriptive]

Duration: 2 Hrs. 40 Mins.

Marks: 50

[Answer question no. One (1) & any four (4) from the rest]

1. Explain the terms: Computer organization, computer design and computer architecture. 10
2. Differentiate between the hardware control unit and micro programmed control unit. Write an assembly language program to add two numbers. 10
3. What are the various schemes which are used for data transfer between two devices of a computer? What is DMA scheme of data transfer? Discuss its operating principle. 10
4. How negative numbers are represented in computer? What is normalization? Perform $(12) + (-6)$ using 2's complement. 10
5. What is the function of memory in a computer system? What are the different types of memory? Discuss their merits, demerits and area of applications. 10
6. What do you mean by control unit? Explains hardwired control unit with block diagram. 10
7. Write the characteristics of RISC and CISC. Draw the figure of general register organization. 10
8. What is pipelining? Explain with an example. How can instruction be pipelined? 10

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[PART-A : Objective]

I.Choose the correct answer from the following:

1X20=20

1. 1's complement of 11110101 is
 - a. 11110000
 - b. 00001111
 - c. 10101010
 - d. 00001010
2. CPU comprises
 - a. ALU
 - b. Control Unit & some registers
 - c. Only (b)
 - d. Both (a) & (b)
3. A high speed device used in CPU for temporary storage during processing is called
 - a. a register
 - b. a bus
 - c. a data bus
 - d. all of the above
4. In a computer data transfer takes place between two devices
 - a. CPU and memory
 - b. CPU and I/O devices
 - c. Memory and I/O devices
 - d. all of the above
5. The number of references required for CPU to read an operand in direct mode address
 - a. 0
 - b. 1
 - c. 2
 - d. 3
6. Semiconductor memory is
 - a. somewhat slower than magnetic core memory
 - b. a volatile memory
 - c. somewhat larger than the magnetic core memory
 - d. all of the above
7. The hardware in which data may be stored for a computer system is called
 - a. Registers
 - b. Bus
 - c. Control Unit
 - d. Memory
8. How many byte(s) are there in 11000101 number?
 - a. 1
 - b. 2
 - c. 3
 - d. 8
9. The memory which is programmed at the time it is manufactured is
 - a. ROM
 - b. RAM
 - c. PROM
 - d. EPROM
10. Which of the following is not an octal number?
 - a. 32
 - b. 75
 - c. 16
 - d. 902
11. Which of the following is not a part of the CPU?
 - a. Storage unit
 - b. Arithmetic and Logic unit
 - c. Program unit
 - d. Control unit
12. A computer program that translates one program instruction at a time into machine language is called a/an
 - a. Interpreter
 - b. CPU
 - c. Compiler
 - d. Simulator
13. Which of the following addressing mode is used for program relocation?
 - a. Immediate address
 - b. Autoincrement
 - c. Implied mode
 - d. Base register mode
14. Computer uses addressing mode technique for
 - a. Giving a programming versatility to user by providing facilities as pointers to memory, counters for loop control
 - b. To reduce numbers of bits in the instruction
 - c. Specifying rules for modifying or interpreting the address field of an instruction
 - d. All of the above

15. A pipeline is like as
- An automobile assembly line
 - House pipeline
 - Both (a) & (b)
 - Gas line
16. To extend the connectivity of the processor bus we use
- PCI bus
 - SCSI bus
 - Controllers
 - Multiple bus
17. The bus used to connect the monitor to CPU
- PCI bus
 - SCSI bus
 - Memory bus
 - Rambus
18. A word whose individual bit represents a control signal is called
- Command word
 - Control word
 - Coordination word
 - Generation word
19. In magnetic disks, concentric circles on each surface is called -----
- Tracks
 - Blocks
 - Pages
 - Sectors
20. Devices that provide backup storage are called
- Main memory
 - Auxiliary memory
 - Cache memory
 - None of the above

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UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGHALAYA



[PART (A) : OBJECTIVE]

Duration : 20 Minutes

Serial no. of the
main Answer sheet

Course :

Semester : Roll No :

Enrollment No : Course code :

Course Title :

Session : 2017-18 Date :

Instructions / Guidelines

- The paper contains twenty (20) / ten (10) questions.
- Students shall tick (✓) the correct answer.
- No marks shall be given for overwrite / erasing.
- Students have to submit the Objective Part (Part-A) to the invigilator just after completion of the allotted time from the starting of examination.

Full Marks	Marks Obtained
20	

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Scrutinizer's Signature

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Examiner's Signature

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Invigilator's Signature